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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,341	12/16/2003	Russell L. Holden	LOT920030052US1	9103

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EXAMINER	
TIMBLIN, ROBERT M	
ART UNIT	**PAPER NUMBER**
2167	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/737,341	HOLDEN ET AL.	
	Examiner	Art Unit	
	Robert M. Timblin	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-8,12-15 and 19-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 5-8, 12-15, and 19-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action corresponds to application 10/737,341 filed 12/16/2003. Claims 1, 5-8, 12-15, and 19-21 have been examined and are pending.

Response to Amendment

Claims 1, 8, and 15 have been amended while claims 2-4, 9-11, 16-18 and 22 have been cancelled. Accordingly, claims 1, 5-8, 12-15, and 19-21 are pending in this application.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 8 and the depending claims therefrom are rejected under 35 U.S.C. 101 because claim 8 is directed towards a system that does not include hardware. In a system without hardware, claim 8 is therefore considered software (or functional descriptive material per se), which is not statutory under 35 U.S.C. 101. See MPEP 2106.01.

If Applicant intends to claim a "software" system, the system needs to be stored in memory or other computer readable storage medium. If Applicant intends to claim a bounce-back prevention system as a machine, there needs to be some form of a structural part of a device or combination of devices as part of what is claimed. As

claim 8 is phrased, there is no structure presented to make the supposed system actually be a machine.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benson (U.S. Patent 5,819,272) in view of Strickler et al (U.S. Patent 6,122,630).

With respect to claim 1 Benson teaches A method for preventing an unread activity from being bounced-back to an originating server during a replication operation, comprising:

storing an identification (drawing reference 34) of an originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1), of a replicated unread activity (i.e. read/unread data set, drawing reference 38, and also a change number (CN) that is unique to the server on which the number was assigned) in an unread log (drawing reference 28) of a receiving server (i.e. replica server, col. 2 line 13-14, figure 1);

during a subsequent replication process (col. 1 line 53-55 and line 23-25) initiated by the receiving server (col. 1 line 23-25 and col. 7 line 18-20);

during the subsequent replication process (col. 1 line 53-55 and line 23-25), replicating the unread activity (col. 2 line 11-17) to at least one other server not identified as the originating server (col. 1 line 56-57, and col.4 line 41-42);

wherein storing an identification (drawing reference 34) further comprises updating the unread log (drawing reference 28, col. 2 line 29-31) to include an unread entry (drawing reference 38) corresponding to the replicated unread activity (i.e. read/unread data set, drawing reference 38), and storing the identification of the originating server (drawing reference 34) with the unread entry (drawing references 28, 34 and 38); and

examining (col. 2 line 24-28) the unread log (drawing reference 28) to determine (i.e. identifying the last server from which the data was updated, col. 2 line 24-25) if any unread entries (drawing reference 38) stored therein correspond to an unread activity (drawing reference 38) received from the originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1) and, during the subsequent replication process (col. 1 line 53-55 and line 23-25), not replicating any unread activity identified as being received from the originating server back to the originating server (col. 2 line 14-16 and col. 4 line 60-61).

While Benson discloses writing back changes to reflect records that are read (col. 2 line 14-16) and not performing a write back in the absence of data changes of read/write data to suggest that unread activity is not written back to the originating server, Benson does not explicitly state preventing replication of the unread activity back to the originating server.

Stickler, however, explicitly states inhibiting a local node from posting selective transactions which were detected as being originally sent by a local node (abstract, last 5 lines and col. 6 lines 20-25) to control replication back to a local server and thus teaching preventing replication of the unread activity back to the originating server.

In the same field of endeavor, (i.e. data replication), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because Strickler's teachings of inhibiting (i.e. preventing) the posting of transactions (i.e. unread activity) back to a local node (i.e. home server of Benson) would have been beneficial to Benson for reducing replication latency (a need shown by Benson at col. 1 line 46). Strickler provides a low-latency replication scheme by limiting a "ping-pong" (or in other words, a bounce back) effect of bidirectional replication. Further, Strickler's teachings would have provided Benson with a method to control replication so that write backs of unread activity are not posted to the originating server and thereby ensuring only changed data is written back to the home server (as needed by Benson at col. 4 line 60-61).

With respect to claim 8, Benson teaches a bounce-back prevention system, comprising:

a receiving server (i.e. replica server, col. 2 line 13-14, figure 1) for receiving an unread activity (i.e. read/unread data set, drawing reference 38) replicated by an originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1), the receiving server (i.e. replica server, col. 2 line 13-14, figure 1) including an

unread log for storing an identification (drawing reference 34) of the originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1);

a subsequent replication process (col. 1 line 53-55 and line 23-25) initiated by the receiving server (col. 1 line 23-25 and col. 7 line 18-20);

wherein the receiving server (i.e. replica server, col. 2 line 13-14, figure 1) further comprises a replication system, and wherein the replication system (col. 1 line 23-25 and col. 7 line 18-20) of the receiving server (i.e. replica server, col. 2 line 13-14, figure 1) replicates the unread activity (drawing reference 38) to at least one other server not identified as the originating server (col. 1 line 56-57, and col.4 line 41-42) during the subsequent replication process (col. 1 line 53-55 and line 23-25);

wherein the receiving server (i.e. replica server, col. 2 line 13-14, figure 1) further comprises a system for updating the unread log (drawing reference 28, col. 2 line 29-31) to include an unread entry (drawing reference 38) corresponding to the replicated unread activity (i.e. read/unread data set, drawing reference 38), and for storing the identification (drawing reference 34) of the originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1) with the unread entry (drawing reference 38); and

a system for examining the unread log to determine if any unread entries stored therein correspond to an unread activity (i.e. read/unread data set, drawing reference 38) received from the originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1), and a system for preventing any unread activities (i.e. read/unread data set, drawing reference 38), identified by the examining system as

being received from the originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1), from being replicated back to the originating server, during the subsequent replication process (col. 1 line 53-55 and line 23-25).

While Benson discloses writing back changes to reflect records that are read (col. 2 line 14-16) and not performing a write back in the absence of data changes of read/write data to suggest that unread activity is not written back to the originating server, Benson does not explicitly state preventing replication of the unread activity back to the originating server.

Stickler, however, explicitly states inhibiting a local node from posting selective transactions which were detected as being originally sent by a local node (abstract, last 5 lines and col. 6 lines 20-25) to control replication back to a local server and thus teaching preventing replication of the unread activity back to the originating server.

In the same field of endeavor, (i.e. data replication), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because Strickler's teachings of inhibiting (i.e. preventing) the posting of transactions (i.e. unread activity) back to a local node (i.e. home server of Benson) would have been beneficial to Benson for reducing replication latency (a need shown by Benson at col. 1 line 46). Strickler provides a low-latency replication scheme by limiting a "ping-pong" (or in other words, a bounce back) effect of bidirectional replication. Further, Strickler's teachings would have provided Benson with a method to control replication so that write backs of unread activity are not

posted to the originating server and thereby ensuring only changed data is written back to the home server (as needed by Benson at col. 4 line 60-61).

With respect to claim 15, Benson teaches a program product stored on a recordable medium for preventing an unread activity from being bounced-back to an originating server during a replication operation, which when executed on a computer system comprises:

storing an identification (drawing reference 34) of an originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1), of a replicated unread activity (i.e. read/unread data set, drawing reference 38) in an unread log (drawing reference 28) of a receiving server (i.e. replica server, col. 2 line 13-14, figure 1);

during a subsequent replication process (col. 1 line 53-55 and line 23-25) initiated by the receiving server (col. 1 line 23-25 and col. 7 line 18-20);

program code for replicating the unread activity (col. 2 line 11-17) to at least one other server not identified as the originating server (col. 1 line 56-57, and col.4 line 41-42);

wherein the program code for storing an identification (drawing reference 34) further comprises updating the unread log (drawing reference 28, col. 2 line 29-31) to include an unread entry (drawing reference 38), and program code for storing the identification of the originating server (drawing reference 34) with the unread entry (drawing references 28, 34 and 38); and

program code for examining (col. 2 line 24-28) the unread log (drawing reference 28) to determine (i.e. identifying the last server from which the data was updated, col. 2 line 24-25) if any unread entries (drawing reference 38) stored therein correspond to an unread activity (drawing reference 38) received from the originating server (i.e. home/first server, drawing reference 34, col. 2 line 12, and figure 1) and, during the subsequent replication process (col. 1 line 53-55 and line 23-25), not replicating any unread activity identified as being received from the originating server back to the originating server (col. 2 line 14-16 and col. 4 line 60-61).

While Benson discloses writing back changes to reflect records that are read (col. 2 line 14-16) and not performing a write back in the absence of data changes of read/write data to suggest that unread activity is not written back to the originating server, Benson does not explicitly state preventing replication of the unread activity back to the originating server.

Stickler, however, explicitly states inhibiting a local node from posting selective transactions which were detected as being originally sent by a local node (abstract, last 5 lines and col. 6 lines 20-25) to control replication back to a local server and thus teaching preventing replication of the unread activity back to the originating server.

In the same field of endeavor, (i.e. data replication), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because Strickler's teachings of inhibiting (i.e. preventing) the posting of transactions (i.e. unread activity) back to a local node (i.e. home server of Benson) would have been beneficial to Benson for reducing

replication latency (a need shown by Benson at col. 1 line 46). Strickler provides a low-latency replication scheme by limiting a "ping-pong" (or in other words, a bounce back) effect of bidirectional replication. Further, Strickler's teachings would have provided Benson with a method to control replication so that write backs of unread activity are not posted to the originating server and thereby ensuring only changed data is written back to the home server (as needed by Benson at col. 4 line 60-61).

Response to Arguments

Applicant's arguments with respect to claims 1, 5-8, 12-15, and 19-21 have been considered but are moot in view of the new ground(s) of rejection applied in view of a different interpretation Benson and the newly added Stickler reference.

The Applicant argues that the Gehani reference fails to disclose at least the features of:

"during the subsequent replication process initiated by the receiving server, preventing replication of the unread activity back to the originating server; and

during the subsequent replication process, replicating the unread activity to at least one other server not identified as the originating server."

Respectfully, these arguments are moot in view of the new grounds of rejection applied above.

The Examiner further submits that Benson in view of Strickler teach and suggest at least the above features. That is, Benson teaches a first, or home server, with an identification (i.e. drawing reference 34) to replicate change data (i.e. change numbers

and drawing reference 38) to a replication server (i.e. receiving server). Furthermore, Benson suggests a receiving server initiating a replication process as a replication scheme that can use either push or pull strategy (col. 7 line 18-20). Also, Benson teaches using several replication servers (i.e. col. 1 line 56-57 and col. 4 line 41-42) to suggest replicating unread activity to at least one other server not identified as the originating server.

The Examiner then submits that Benson and Strickler sufficiently teach the claimed preventing replication of the unread activity back to the originating server for the rationale disclosed in the rejection above.

Claims 5-7, 12-14, and 19-21 rejected under 35 U.S.C. 103(a) as being obvious over Benson.

With respect to claim 5, Benson teaches the method of claim 1, wherein the originating server has a name (i.e. Home_Server_GUID, drawing reference 34).

Benson does not explicitly disclose the identification is a hash of the name of the originating server.

Although Benson does not explicitly disclose the identification is a hash of the name of the originating server, it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to hash the GUID of the home server for the benefit of having compressed identifiers for ease of transmission and thus reducing replication latency (as disclosed by Benson, abstract).

With respect to claim 6, Benson teaches the method of claim 5, wherein during the subsequent replication process, if another server has the same hash as the originating server, the receiving server replicates the unread activity to the other server and back to the originating server (col. 5 lines 60-62 and 56-58, step 70).

With respect to claim 7, Benson teaches the method of claim 6, wherein the originating server discards any duplicate replicated unread activities (col. 5 lines 39-57 suggests keeping single instances of replicated activities).

With respect to claim 12, the system of claim 8, wherein the originating server has a name (i.e. Home_Server_GUID, drawing reference 34).

Benson does not explicitly disclose the identification is a hash of the name of the originating server.

Although Benson does not explicitly disclose the identification is a hash of the name of the originating server, it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to hash the GUID of the home server for the benefit of having compressed identifiers for ease of transmission and thus reducing replication latency (as disclosed by Benson, abstract).

With respect to claim 13, Benson teaches the system of claim 12, wherein the receiving system includes a replication system, and wherein during the subsequent replication process, if another server has the same hash as the originating server, the

replication system of the receiving server replicates the unread activity to the other server and back to the originating server (col. 5 lines 60-62 and 56-58, step 70).

With respect to claim 14, Benson teaches the system of claim 13, wherein the originating server discards any duplicate replicated unread activities (col. 5 lines 39-57 suggests keeping single instances of replicated activities).

With respect to claim 19, Benson teaches the program product of claim 15, wherein the originating server has a name (i.e. Home_Server_GUID, drawing reference 34).

Benson does not explicitly disclose the identification is a hash of the name of the originating server.

Although Benson does not explicitly disclose the identification is a hash of the name of the originating server, it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to hash the GUID of the home server for the benefit of having compressed identifiers for ease of transmission and thus reducing replication latency (as disclosed by Benson, abstract).

With respect to claim 20, Benson teaches Benson teaches the method of claim 5, wherein during the subsequent replication process, if another server has the same hash as the originating server, the receiving server replicates the unread activity to the other server and back to the originating server (col. 5 lines 60-62 and 56-58, step 70).

With respect to claim 21, Benson teaches the program product of claim 20, wherein the originating server discards any duplicate replicated unread activities (col. 5 lines 39-57 suggests keeping single instances of replicated activities).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application 2002/0065827. The subject matter disclosed therein pertains to the pending claims (i.e. discarding duplicates).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Timblin whose telephone number is 571-272-5627. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner AU 2167
9/24/2007

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